

Application No.: 10/523227
Docket No.: CL2109USPCT

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REMARKS

1. The Office Action indicated that the application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract is supplied above.

2. The Office Action indicated that Claim 1 was objected to because the word "one" was inappropriately repeated at the third line of the claim. A set of claims including an amendment to Claim 1 is supplied above.

3. In the Office Action claims 1 and 2 were rejected as unpatentably obvious under 35 U.S.C. 103(a) when considered in light of EP1038858 A1 (Kanemura et al.) in view of WO 98/10862 (Scott et al.). The Office Action maintained inter alia that the difference between Kanemura et al. and the claimed invention is that the chromium oxide catalyst disclosed by Kanemura et al. is in an amorphous state, whereas the catalysts to be used in accordance with the present invention are said to be in crystalline state; that Scott et al. discloses a chromium-based fluorination catalyst which is at least partially crystalline and contains an additional element such as cobalt and nickel utilized for the preparation of fluorocarbons (page 7, lines 1-6 and page 8, lines 3-5 were cited); and that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use crystalline from the desired catalyst with the expectation that the total yield of chlorofluoroethane by-products can be decreased without significantly deteriorating the activity of pentafluoroethane catalyst disclosed by Kanemura et al.

Applicants submit that Kanemura et al. teaches a method of preparing pentafluoroethane that involves a chromium-containing catalyst wherein (as recognized in the Office Action) the average valence of the chromium in the catalyst is not less than +3.5 but not more than +5.0. In contrast, the valence of the chromium in the Scott et al. catalyst is preferably about 3, although a small amount, say up to 10%, of chromium (VI) may be present as a result of the conditions under which the chromia is crystalized (see page 4, line 30 to page 5, line 1). Applicants note that according to Kanemura et al., the activity of the catalyst for the formation of pentafluoroethane is much higher with an amorphous catalyst with a chromium valence of +3.5 to +5 than the activity of a crystalline catalyst or a catalyst with a chromium valence of +3. (page 4, lines 32-34, emphasis added). Moreover, Applicants note that Kanemura et al., illustrates an increase in the amount of chlorofluoroethanes relative to pentafluoroethane increases when using catalysts having a chromium valence of +3 (see page 23, Table 7 and Comparative Examples 7 and 8 and lines 54-58, emphasis added); and Kanemura et al. suggests that the effect of decreasing CFCs is small in the case of adding metals to crystalline catalysts of chromium with a valence of +3 (page 28, lines 54-56). Accordingly, Applicants submit that one of ordinary skill considering the Kanemura et al.

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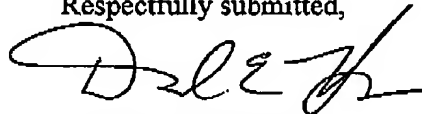
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process would clearly not be led to use catalysts preferred by Scott et al., in view of the teachings of Kanemura et al. itself.

In any event (as recognized in the Office Action) the pentafluoroethane preparation process of the present claims involves a fluorination catalyst that comprises at least one chromium-containing component selected from (i) a crystalline cobalt-substituted alpha-chromium oxide where from about 0.05 atom % to about 6 atom % of the chromium atoms in the alpha-chromium oxide lattice are replaced by trivalent cobalt, and (ii) a fluorinated crystalline oxide of (i). Applicants submit that neither the teachings of Kanemura et al. nor the teachings of Scott et al. disclose or fairly suggest the use of such catalysts as claimed in this application.

In light of the above, reconsideration and allowance of the claims are respectfully solicited.

Respectfully submitted,



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